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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/299,659	04/27/1999	YUTAKA TERADA	43889-861	3538

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EXAMINER

FAN, CHIEH M

ART UNIT PAPER NUMBER

2634

DATE MAILED: 04/02/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/299,659

Applicant(s)

TERADA ET AL.

Examiner

Chieh M Fan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/15/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In particular, the limitation "without being subject to a delay" has been recited in claim 3.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 2-5 and 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In the previous Office Action, claims 2, 3, 5 and 10 were rejected because the claimed limitation would cover one of the three situations: (a) comparing the edge of the

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clock with the leading edge of the data signal only, (b) comparing the edge of the clock with trailing edge of the data signal only and (c) comparing the edge of the clock with both leading and trailing edges of the data signal, but only situation (c) had support from the specification. As explained in the last Office Action, the comparator 5 in Fig. 1 of the present invention clearly needs to compare both the leading and trailing edges of the data signal with the edge of the clock signal to generate the control signals Cde1F/B and Cde2F/B. Therefore, situations (a) and (b) clearly do not have support in the specification.

In the latest amendment filed 1/15/04, each of the independent claims 2, 3 and 4 are amended to include the limitation "a comparator for comparing an edge of the clock signal, on which the data signal is intended to be latched, to **one of a leading edge and a trailing edge of the data signal**" (emphasis added), which exactly covers the situations (a) or (b) above. Therefore, the claims, as amended, clearly do not have support from the specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4, 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitations "a first delay circuit fro defining the delay time for a logically high state of the data signal based on a result of comparison, performed by the

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comparator, between one of the **leading edges** of the data signal and the edge of the clock signal” and “a second delay circuit for defining the delay time for a logically low state of the data signal based on a result of comparison, performed by the comparator, between one of the **trailing edges** of the data signal and the edge of the clock signal”. Therefore, the limitations require the edge of the clock signal to be compared with both the leading and trailing edges of the data signal. However, on the other hand, claim 4 also recites “a comparator for comparing an edge of the clock signal, on which the data signal is intended to be latched, to **one of leading and trailing edges of the data signal**”. That is, the comparator only compares the edge of the clock signal with either the leading edges or the trailing edges of the data signal only. Therefore, the limitations associated with the first and second delay circuits clearly contradict the limitation associated with the comparator in claim 4. The scope of claim 4 is therefore indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 3 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Akashi (U.S. Patent No. 6,178,212).

Akashi teaches an input circuit comprising:

delay means (21, 22, 24, 25' in Fig. 1; also see col. 4, lines 24-67) for defining a delay time (25' in Fig. 1) for at least one logical state of a data signal (Din in Fig. 1) and thereby delaying a clock signal (CLK in Fig. 1) from the delay time defined; and

a holding circuit (28 in Fig. 1) for holding the data signal responsive to the delayed clock signal;

wherein the delay means comprises:

a comparator (21, 22 in Fig. 1) for comparing an edge of the clock signal, which has not been subjected to a delay, and on which the data signal is intended to be latched, to one of a leading edge (21 in Fig. 1; col. 4, lines 40-44) and a trailing edge (22 in Fig. 1; col. 4, lines 45-47) of the data signal during each cycle of said clock signal; and

a delay circuit (25' in Fig. 1; col. 4, lines 53-64) for defining the delay time based on a result of comparison performed by the comparator.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akashi (U.S. Patent No. 6,178,212) in view of Suzuki (U.S. Patent No. 5,952,857).

Akashi teaches the claimed invention (see the rationale applied to claim 3 above), but does not teach the delay circuit defines the delay time based on a setup time for correctly latching the data signal. Suzuki teaches that, in order to insure reliable data reading at rising edge of the clock signal, data must become valid at least a setup time before a given rising edge (col. 1, lines 15-17). Suzuki also teaches a delay circuit that delays a clock signal by a setup time (14 in Fig. 1; col. 4, lines 25-27). The delayed clock signal is then used to latch the data signal (15-1 in Fig. 1). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to define the delay time based on setup time, so as to insure reliable data reading.

Response to Arguments

10. Applicant's arguments with respect to claims 2, 3, 5 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

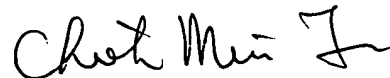
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (703) 305-0198. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-4714. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Chieh M Fan
Primary Examiner
Art Unit 2634

cmf
March 25, 2004